Having thus defined the invention, it is claimed:

1) An exhaust aftertreatment system for use in a diesel engine comprising:

a) a catalyzed soot filter downstream of the diesel engine and through which the exhaust gases from the diesel engine pass;

b) an SCR catalyst downstream of the catalyzed soot filter and through which the exhaust gases from the diesel engine pass after passing through the catalyzed soot filter; and,

c) a metering valve for metering a reducing agent tending to reduce NOx at elevated temperature in the exhaust gases when passing through the SCR catalyst.

2) The system of claim 1 wherein the reducing agent is ammonia and the metering valves meters the ammonia at a position between the catalyzed soot filter and the SCR catalyst.

3) The system of claim 2 further including a mixing station upstream of the metering valve for producing ammonia in gas or liquid form from an ammonia precursor such as urea.

4) The system of claim 1 wherein said SCR catalyst is a lean NOx catalyst of a high or low temperature type and the reducing agent is a hydrocarbon.

5) The system of claim 4 wherein the metering valve is positioned upstream of the catalyzed soot filter.

6) The system of claim 5 wherein the catalyzed soot filter and lean NOx catalyst is formed as single brick, the brick having an upstream catalyzed portion acting as a soot filter and a downstream catalyzed portion acting as a lean NOx catalyst.

7) An emission purification system for treating exhaust gases produced by a vehicle powered by a diesel engine comprising:

a) a catalyzed soot filter adjacent said engine of the wall-flow type having gas permeable walls formed into a plurality of axially extending channels, each channel having one end plugged with any pair of adjacent channels plugged at opposite ends thereof, said exhaust gases passing through said channel walls as said gases travel from an entrance to an exit of said soot filter;

b) a valve downstream of said soot filter's exit in fluid communication with a nitrogen reductant and with said exhaust gases after exiting said soot filter;

c) means for regulating said valve to control the quantity of said nitrogen reductant admitted to said exhaust gases; and,

d) a nitrogen reductant SCR catalyst downstream of said valve and said soot filter, said SCR catalyst having a set temperature at which said SCR catalyst becomes catalytically active for a set space velocity if said exhaust gases pass through said SCR catalyst with a set quantity of reductant immediately upon exit from said

engine that is higher than the temperature at which said SCR catalyst becomes catalytically active when said exhaust gases pass through said SCR catalyst at said set space velocity with said set quantity of reductant after passing through said soot filter.

8) The system of claim 7 wherein said soot filter has a catalyzed surface containing at least 25 g/ft^3 of a precious metal coating.

9) The system of claim 7 wherein said SCR catalyst has a catalyst composition of zeolite, a promoter selected from the group consisting of iron and copper and a refractory binder.

10) The system of claim 9 wherein said nitrogen reductant is ammonia and said quantity of said reductant metered to said exhaust gases does not exceed a normalized stoichiometric ratio of 1.5.

11) The system of claim 10 wherein said catalytically active temperature of said SCR catalyst downstream from said soot filter is less than about 200EC.

12) A method for treating exhaust gas emissions produced by a vehicle powered by a diesel engine including light duty diesel engines, said exhaust gases including nitrogen oxides, NOx, with nitric oxides (NO) comprising at least 50% of the composition of said NOx, and soot containing a VOF, said method comprising the steps of:

a) providing a catalyzed soot filter downstream of said engine, said soot filter comprising gas porous walls catalyzed on both sides thereof formed into axially extending channels, each channel having a plug at one end and open at its opposite end with any pair of adjacent channels having plugs at opposite channel ends;

b) flowing said exhaust gas into channels having open ends confronting said engine which define open end channels, oxidizing said NO through contact with said catalyzed wall surfaces of said open ended channels to produce NO_2 and reacting said NO_2 with said VOF in said open ended channels to reduce said NO_2 to said NO;

c) flowing said NO through said walls into channels having plug ends confronting said engine which define closed end channels, and oxidizing said NO by contact with said catalyzed wall surfaces on said closed end channels to produce NO_2, said exhaust gases having a higher concentration of NO_2 exiting said soot filter than entering said soot filter;

d) injecting a set amount of a nitrogen reductant into said exhaust stream downstream of said soot filter;

e) providing a SCR catalyst on a monolith; and,

f) passing said gases into which said reductant has been injected over and in contact with said SCR catalyst whereby said NOx is reduced.

13) The method of claim 12 wherein said soot filter has a catalyzed surface containing at least 25 g/ft^3 of a platinum metal group.

14) The method of claim 13 wherein said SCR catalyst has a catalyst composition of zeolite, a promoter selected from the group consisting of iron and copper and a refractory binder.

15) The method of claim 14 wherein said nitrogen reductant is ammonia and said quantity of said reductant metered to said exhaust gases does not exceed a normalized stoichiometric ratio of 1.5.

16) A method for reducing NOx emissions produced by vehicles powered by light duty diesel and similar engines having exhaust gas operating temperatures as low as about 200EC comprising the steps of:

a) increasing the NO_2 concentration present in the NOx gases initially generated by said engine by immediately passing the NOx exhaust gases thorough a catalyst soot filter;

b) metering an ammonia reductant into said exhaust gases after said exhaust gases have exited said catalyzed soot filter; and,

c) passing said exhaust gases with said reductant through an SCR catalyst for reducing said NOx.

17) The method of claim 16 wherein said soot filter has a catalyzed surface containing at least 25 g/ft^3 of a platinum metal group.

18) The method of claim 17 wherein said SCR catalyst has a catalyst composition of zeolite, a promoter selected

from the group consisting of iron and copper and a refractory binder.

19) The method of claim 18 wherein said nitrogen reductant is ammonia and said quantity of said reductant metered to said exhaust gases does not exceed a normalized stoichiometric ratio of 1.5.

20) The method of claim 19 wherein said exhaust gases are immediately passed to atmosphere after exiting said SCR catalyst without further treatment of emissions contained therein.